

Title (en)
Turbo-engine, particularly internal combustion engine

Title (de)
Turbomotor, insbesondere Verbrennungsmotor

Title (fr)
Turbomoteur, en particulier moteur à combustion interne

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Application
EP 11170776 A 20110621

Priority

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Abstract (en)
The invention is directed to a turbo-engine, particularly internal combustion engine, comprising a housing and therein a bladeless turbine section (30; 42; 67) of the stacked disc- or Tesla-type construction, wherein the turbine section (30; 42; 67) has a plurality of closely spaced discs (32; 49; 61) arranged for common rotation about a rotation axis in the housing, said turbine section (30; 42; 67) is adapted for passing with tangential flow components a working fluid stream from a radially inner region to a radially outer region of said turbine section (30; 42; 67) while adopting energy from said working fluid stream for rotating the discs (30; 49; 61). Preferably, the turbo-engine further comprises a compressor section (40; 66) of the stacked disc- or Tesla-type construction having a plurality of closely spaced discs (45; 61) arranged for common rotation about said rotation axis and a combustion zone (41; 64), wherein said compressor section (40; 66) being arranged coaxially with- and radially inwardly of the turbine section (30; 42; 67) with the combustion zone (41; 64) provided radially between the compressor section and the turbine section.

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Citation (applicant)

- US 1061142 A 19130506 - TESLA NIKOLA [US]
- US 1061206 A 19130506 - TESLA NIKOLA [US]
- GB 347206 A 19310416 - FRANK WHITTLE
- US 3045428 A 19620724 - MCLEAN WILLIAM B
- US 6973792 B2 20051213 - HICKS KENNETH [US]
- US 6692232 B1 20040217 - LETOURNEAU GUY LOUIS [US]
- US 6989428 B1 20060124 - BIANCONI PATRICIA A [US], et al
- WARREN RICE, TESLA TURBOMACHINERY, PROCEEDINGS, IV INTERNATIONAL NIKOLA TESLA SYMPOSIUM, SEPT. 23-25, 1991, 23 September 1991 (1991-09-23)

Citation (search report)

- [X] US 2003002976 A1 20030102 - DIAL DANIEL CHRISTOPHER [US]
- [X] EP 0474929 A1 19920318 - IBM [US]
- [X] AU 771685 B2 20040401 - MICROMACHINES LTD
- [A] US 2006216149 A1 20060928 - WILSON ERICH A [US]

Cited by
EP3545170A4; EP4144956A1; US10794239B2; US11572788B2

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